

Data Validation Checklist Inorganic Analyses

Project: 35TH Avenue Superfund Site
 Laboratory: TestAmerica - Savannah, GA
 Method: SW-846 6010C and 7471B; EPA 200.7 and 245.1
 Matrix: Soil and Water
 Reviewer: Jane Lindsey
 Concurrence¹: Carol Lovett / Martha Meyers-Lee

Project No: 15268508.20000
 Job ID.: 680-87447-3
 Associated Samples: Refer to **Attachment A** (Sample Summary)
 Date(s) Collected: 02/12/2013
 Date: 03/05/2013
 Date: 03/28/2013

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
1. Were sample preservation requirements met? If pH of aqueous sample >2 and was not adjusted by laboratory prior to analysis, J- flag positive results and R- flag non-detect results.	✓				
2. Were all COC records signed and integrity seals intact, indicating that COC was maintained for all samples?	✓				
3. Were there any problems noted in laboratory data package concerning condition of samples upon receipt?		✓			
4. Do any soil/sediment samples contain more than 50% water? If yes, then results are to be reported on a wet-weight basis.	✓			Sample CV0971E-CS (680-87447-6) contained 51.5% water, but was reported on a dry-weight basis. Due to high moisture content, results should be report on a wet-weight basis.	J/UJ
5. Have any technical holding times, determined from date of collection to date of analysis, been exceeded? (Hg: ≤28 days, other metals: ≤6 months). If not, then J- flag positive results and R- flag non-detect aqueous results.		✓			
6. Were results for all project-specified target analytes reported?	✓				
7. Were project-specified Reporting Limits achieved for undiluted sample analyses?		✓		The MDL (0.59 mg/Kg) for arsenic is greater than the Resident Soil RSL (0.39 mg/Kg). A RSL does not exist for total chromium; however, the total chromium MDL (0.5 mg/Kg) is greater than the hexavalent chromium Resident Soil RSL (0.29 mg/Kg).	
8. Were method blank (MB) prepared at the appropriate frequency (one per 20 samples, batch, matrix, and level)?	✓				
9. Was a calibration blank (ICB/CCB) analyzed at the beginning, after every 10 th sample, and at the end of each analytical run?	✓				

¹ Independent technical reviewer

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
10. Were target analytes detected in the method and/or calibration blanks?	✓			Selenium was detected in the aqueous method blank (MB 680-266411/1-A) at 9.79 J µg/L (RL=20, MDL=6.4). Arsenic was detected at concentrations below the reporting limit during the SW-846 6010 analysis of calibration blanks.	
11. Were target analytes reported in equipment/rinsate blanks analyses above the DL?		✓		According to the QAPP, a rinsate blank is to be collected after each decontamination event, which occurs once per week per the client. A rinsate blank (021213-RB-Shovel (680-87447-31)) was collected for the week of February 11, 2013. Target analytes were not detected during the EPA Methods 200.7 and 245.1 analyses of the rinsate blank that was collected on February 12, 2013 and all results are reported under this Job ID.	
12. Were contaminants detected in samples below the blank contamination action level? <ul style="list-style-type: none"> ○ If blank result > RL, <ul style="list-style-type: none"> • Flag sample results ≤ RL with a U • Flag positive sample results > RL and ≤10x blank result , as J+ positive results ○ If blank result ≤RL, <ul style="list-style-type: none"> • Flag sample results ≤ RL with a U • Flag positive sample results > RL and ≤10x blank result , as J+ positive results 		✓		Qualification of soil sample results due to the presence of selenium method blank contamination is not warranted, as the method blank pertains to rinsate blank 021213-RB-Shovel only. In addition, qualification of sample results due to the presence of calibration blank contamination is not warranted, as all blank results were significantly less than that detected in samples.	
13. Are there negative laboratory blank results with the absolute value ≤RL? If yes, then flag positive and non-detect sample results that are < 10x absolute blank value as J- and UJ, respectively.		✓			
14. Was a field duplicate analyzed?		✓			
15. Was precision deemed acceptable as defined by the project plans?			✓		
16. Were initial and continuing calibration standards analyzed at the lab/project-specified frequency for each instrument? <ul style="list-style-type: none"> ○ 6010C: <ul style="list-style-type: none"> • ICAL: Blank and one standard • ICV initially, and CCV every 10th sample and at the end of the analytical run • Lower Limit of Quantitation Check Sample (CRI) to be analyzed after establishing lower laboratory reporting limits and as needed 	✓			Soil: <ul style="list-style-type: none"> • 6010C: 02/20/2013. One blank and one standard initially. ICV initially, and CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. • 7471B: 02/20/13. 6-Point ICAL. ICV initially, CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. 	

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
<ul style="list-style-type: none"> ○ 7471B: <ul style="list-style-type: none"> • ICAL: Blank and five standards • ICV initially, and CCV every 10th sample and at the end of the analytical run 				Water: <ul style="list-style-type: none"> • 200.7: 02/18/2013. One blank and one standard initially. ICV initially, and CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. • 245.1: 02/17/2013. 6-Point ICAL. ICV initially, CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. 	
17. Were these results within lab/project specifications? <ul style="list-style-type: none"> ○ 6010C <ul style="list-style-type: none"> • ICV/CCV (Criteria: 90-110%R): <ul style="list-style-type: none"> ▪ If %R <75, then J- flag positive results and R-flag non-detects ▪ If 75-89%R, then J- flag positive results and UJ flag non-detects ▪ If 111-125%R, then J flag positive results ▪ If >125%R, then J+ flag positive results ▪ If >160%R, then R flag positive results • CRI (Method: 70-130%R, Laboratory: 50-150%R; Project: 50-150%R for Sb, Pb, and Tl, and 70-130%R for all other analytes): <ul style="list-style-type: none"> ▪ If CRI %R <50 (<30% for Sb, Pb, TL), then R flag results ≤ 2x RL and J flag positive results >2x RL ▪ If CRI %R 50-69% (30-49% for Sb, Pb, TL), then J- and UJ flag positive results <2x RL and ND, respectively ▪ If CRI %R >130% and ≤180% (>150%, but ≤200% for Sb, Pb, TL), then J+ flag positive results <2x RL ▪ If CRI %R >180% (>200% for Sb, Pb, TL), then R flag positive results ○ 7471B <ul style="list-style-type: none"> • ICV/CCV (Criteria: 80-120%R): <ul style="list-style-type: none"> ▪ If correlation coefficients <0.995, then J and UJ flag positive and non-detect results. ▪ If %R <65, then J- flag positive results and R-flag non-detects ▪ If 65-79%R, then J- flag positive results and UJ flag non-detects ▪ If 121-135%R, then J flag positive results ▪ If >135%R, then J+ flag positive results ▪ If >170%R, then R flag positive results • CRI (Method: Not required, Laboratory: 50-150%R, Project: 70-130%R): 	✓			Mercury correlation coefficients (raw data): <ul style="list-style-type: none"> • 7171B: ICAL of 02/20/2013, 0.9993485 (page 327) • 245.1: ICAL of 02/17/2013, 0.9999273 (page 331) 	

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
<ul style="list-style-type: none"> If CRI %R <50, then R flag results $\leq 2x$ RL and J flag positive results $>2x$ RL If CRI %R 50-69%, then J- and UJ flag positive results $<2x$ RL and ND, respectively If CRI %R $>130\%$ and $\leq 180\%$, then J+ flag positive results $<2x$ RL If CRI %R $>180\%$, then R flag positive result 					
18. Was the interference check sample (ICS) analyzed at the beginning of each ICP analytical run?	✓				
19. Are ICS recoveries within 80-120% of the true value? If not, qualify data as follows when native Al, Fe, Ca, and Mg sample concentrations are equal to or greater than the ICS spiking level: <ul style="list-style-type: none"> If $>120\%R$ (or $>$true value plus $2x$ CRQL), J+ flag positive results If 50-79%R (or less than true value – $2x$ the CRQL), J- flag positive results and UJ flag non-detects If $<50\%R$, J- flag positive results and R-flag non-detects 	✓				
20. Was a LCS analyzed for each preparation batch (one per 20 samples per matrix and level)?	✓				
21. Did LCS recoveries meet method/laboratory/project (80-120%R) specifications? <ul style="list-style-type: none"> Soil: <ul style="list-style-type: none"> LCS result $>$ Upper control limit (UCL): J+ flag positive results LCS result $<$ Lower control limit (LCL): J- flag positive results and UJ flag non-detects Aqueous: <ul style="list-style-type: none"> If $<50\%R$, then J- and R flag positive and ND results, respectively If 50-LCL%R, J- and UJ flag positive and ND results, respectively $>UCL$: J+ Flag positive results $>150\%R$: R Flag results 	✓				
22. Was the RPD between LCS and LCSD results within method/laboratory /project control limits ($\leq 20\%$ RPD)? If not, J and UJ flag positive and non-detect results, respectively			✓	LCS only	
23. Was a Matrix Spike (MS) and Matrix Spike Duplicate (MSD) analyzed once per preparation batch?	✓				
24. Is the MS and MSD parent sample a project-specific sample?	✓			<ul style="list-style-type: none"> Solid, 6010C, Prep Batch 266336: 680-87447-2 (CV0971A-CS), MS/MSD 	

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
				<ul style="list-style-type: none"> Solid, 7471B, Prep Batch 266271: 680-87447-2 (CV0971A-CS), MS/MSD Water, 200.7, Prep Batch 266411: 680-87441-2 (Batch sample), MS/MSD Water, 245.1, Prep Batch 266572: 680-87447-31 (021213-RB-Shovel) 	
25. Was a post-digestion spike (PDS) analysis conducted when MS and/or MSD results did not meet control limits (Note: PDS is not required for silver)?	✓			<ul style="list-style-type: none"> Solid, 6010C: 680-87447-2 (CV0971A-CS) Water, 200.7: 680-87447-31 (021213-RB-Shovel) 	
26. For all analytes with sample concentration < 4 x spike concentration, are spike recoveries within method (6010C: 75-125%R MS/MSD and 80-120%R PDS; 7471B: 80-120%R MS/MSD and PDS not required), laboratory (MS, MSD, and PDS: 75-125%R), and project (as noted below) specifications? <i>Only QC results for project samples that are reported under this Job ID are evaluated..</i> If not, <ul style="list-style-type: none"> 6010C: <ul style="list-style-type: none"> If MS %R <30 and PDS %R <75, then J- and R Flag positive and ND results, respectively If MS %R <30 and PDS %R >75, then J flag positive and UJ flag non-detect results If MS and MSD %R 30-74 and PDS%R <75, then J- flag positive and UJ flag non-detect results If MS and MSD %R 30-74 and PDS%R ≥75, then J flag positive and UJ flag non-detect results If MS, MSD, and PDS %R >125, J+ flag positive results If MS and MSD %R >125 and PDS %R ≤125, then J flag positive results If MS and MSD %R <30 and no PDS, then J- flag positive and R-flag non-detect results If MS and MSD %R 30-74 and no PDS, then J- and UJ flag positive and non-detect results, respectively If MS and MSD %R >125 and no PDS, then J+ flag positive results 7471B: <ul style="list-style-type: none"> If MS %R <30, then J- and R Flag positive and ND results, respectively If MS and MSD %R 30-74, then J- flag positive and UJ flag non-detect results If MS and MSD %R >125, then J+ flag positive results 		✓		CV0971A-CS (680-87447-2): <ul style="list-style-type: none"> Arsenic MS and MSD @ -556 and -575%R (75-125), respectively. The native sample concentration is greater than 4x the MS/MSD spiking level; therefore, an evaluation of interference is not possible based on MS/MSD results. PDS recovery met acceptance criteria. Barium MS and MSD @ 232 and 1620%R (75-125), respectively. The native sample concentration is greater than 4x the MS/MSD spiking level; therefore, an evaluation of interference is not possible based on MS/MSD results. PDS recovery met acceptance criteria. Chromium MS and MSD @ 33 and -37%R (75-125), respectively. PDS @ 93%R. Flag result with J. Lead MS and MSD @ -6 and -761%R (75-125), respectively. PDS recovery met control limits. The native sample concentration is greater than 4x the MS/MSD/PDS spiking level; therefore, an evaluation of interference is not possible. Silver MSD @ 53%R (75-125). Qualification of data is not required, because the MS %R (97) is within acceptance criteria. PDS recovery met acceptance criteria. Mercury MS @ 142%R (80-120). Qualification of data is not required, because the MSD %R (100) is within acceptance criteria. 	J

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
27. Were laboratory/project ($\leq 20\%$ RPD) criteria met for precision during the MS and MSD analysis? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> If RPD $> 20\%$, J and UJ flag positive and non-detect results. 		✓		CV0971A-CS (680-87447-2): <ul style="list-style-type: none"> Barium MS and MSD RPD @ 51% (≤ 20). The native sample concentration is greater than 4x the spiking level; therefore, an evaluation of interference is not possible. Silver MS/MSD RPD @ 57% (≤ 20). Flag result with J. 	J
28. Was a serial dilution conducted for 6010C?	✓				
29. Is the serial dilution parent sample a project-specific sample?	✓			<ul style="list-style-type: none"> Solid, 6010C: 680-87447-2 (CV0971A-CS) Water, 200.7: 680-87447-31 (021213-RB-Shovel) 	
30. Is the percent difference between the serially diluted result and undiluted result less 10% (for those analytes with native concentrations greater than 50x the DL)? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> If %D > 10, J and UJ flag positive and non-detect results, respectively. 	✓				
31. Was a laboratory duplicate analyzed?		✓			
32. Was the lab duplicate analysis conducted on a project-specific sample?			✓		
33. Were criteria for laboratory/project precision met? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> If RPD values $> 20\%$ (35% for soil/sediment) or absolute difference $> RL$ (2x RL for soil/sediment), then J and UJ flag positive and non-detect results, respectively 			✓		
34. Were lab comments included in report? If yes, summarize contents or attach a copy of the narrative.	✓			Refer to Attachment B (Case Narrative)	
Comments: The data validation was conducted in accordance with the <i>Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1</i> (OTIE, October 2012). The data review process was modeled after the <i>USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Inorganic Data Review</i> (EPA 540-R-04-004, October 2004). Sample results have been qualified based on the results of the data review process (Attachment C). Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment					

DV Flag Definitions:

- J- The result is an estimated quantity, but the result may be biased low.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
- U The analyte was analyzed for, but was not detected above the associated level; blank contamination may exist.
- UJ The analyte was analyzed for, but was not detected. The reported limit is approximate and may be inaccurate or imprecise.

ATTACHMENT A
SAMPLE SUMMARY

Sample Summary

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87447-3
SDG: 68087447-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-87447-2	CV0971A-CS	Solid	02/12/13 08:45	02/14/13 10:18
680-87447-6	CV0971E-CS	Solid	02/12/13 09:13	02/14/13 10:18
680-87447-7	CV0971F-CS	Solid	02/12/13 09:10	02/14/13 10:18
680-87447-12	CV0971K-CS	Solid	02/12/13 09:40	02/14/13 10:18
680-87447-31	021213-RB-Shovel	Water	02/12/13 12:36	02/14/13 10:18
680-87447-32	CV0971A-CS (sieve)	Solid	02/12/13 08:45	02/14/13 10:18
680-87447-33	CV0971E-CS (sieve)	Solid	02/12/13 09:13	02/14/13 10:18
680-87447-34	CV0971F-CS (sieve)	Solid	02/12/13 09:10	02/14/13 10:18
680-87447-35	CV0971K-CS (sieve)	Solid	02/12/13 09:40	02/14/13 10:18

ATTACHMENT B

CASE NARRATIVE

Case Narrative

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87447-3
SDG: 68087447-3

Job ID: 680-87447-3

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Oneida Total Integrated Enterprises LLC

Project: 35th Avenue Superfund Site

Report Number: 680-87447-3

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 02/14/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 5.2 C.

METALS (ICP)

Sample 021213-RB-Shovel (680-87447-31) was analyzed for Metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 02/15/2013 and analyzed on 02/20/2013.

Selenium was detected in method blank MB 680-266411/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Refer to the QC report for details.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY

Sample 021213-RB-Shovel (680-87447-31) was analyzed for total mercury in accordance with EPA Method 245.1. The samples were prepared on 02/18/2013 and analyzed on 02/20/2013.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)

Samples CV0971A-CS (680-87447-2), CV0971E-CS (680-87447-6), CV0971F-CS (680-87447-7), CV0971K-CS (680-87447-12), CV0971A-CS (sieve) (680-87447-32), CV0971E-CS (sieve) (680-87447-33), CV0971F-CS (sieve) (680-87447-34) and CV0971K-CS (sieve) (680-87447-35) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/15/2013 and analyzed on 02/18/2013.

Several analytes recovered outside the recovery criteria for the MS/MSD of sample CV0971A-CS (680-87447-2) in batch 680-266674. Also, Barium and Silver exceeded the rpd limit.

Refer to the QC report for details.

Case Narrative

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87447-3
SDG: 68087447-3

Job ID: 680-87447-3 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples CV0971A-CS (680-87447-2), CV0971E-CS (680-87447-6), CV0971F-CS (680-87447-7), CV0971K-CS (680-87447-12), CV0971A-CS (sieve) (680-87447-32), CV0971E-CS (sieve) (680-87447-33), CV0971F-CS (sieve) (680-87447-34) and CV0971K-CS (sieve) (680-87447-35) were analyzed for total mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 02/14/2013 and analyzed on 02/17/2013.

Mercury recovered outside the recovery criteria for the MS of sample CV0971A-CS (680-87447-2) in batch 680-266610.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

No other difficulties were encountered during the mercury analyses.

All other quality control parameters were within the acceptance limits.

ATTACHMENT C
QUALIFIED SAMPLE RESULTS

Client Sample Results

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87447-3
SDG: 68087447-3

Client Sample ID: CV0971A-CS

Lab Sample ID: 680-87447-2

Date Collected: 02/12/13 08:45

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 55.0

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	150		3.6	1.1	mg/Kg	☼	02/15/13 08:39	02/18/13 14:11	1
Barium	310		1.8	0.54	mg/Kg	☼	02/15/13 08:39	02/18/13 14:11	1
Cadmium	1.3		0.90	0.18	mg/Kg	☼	02/15/13 08:39	02/18/13 14:11	1
Chromium	68	J	1.8	0.90	mg/Kg	☼	02/15/13 08:39	02/18/13 14:11	1
Lead	470		1.8	0.95	mg/Kg	☼	02/15/13 08:39	02/18/13 14:11	1
Selenium	4.5	U	4.5	1.8	mg/Kg	☼	02/15/13 08:39	02/18/13 14:11	1
Silver	0.30	J	1.8	0.17	mg/Kg	☼	02/15/13 08:39	02/18/13 14:11	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.39		0.032	0.013	mg/Kg	☼	02/14/13 14:40	02/17/13 17:14	1

Client Sample ID: CV0971E-CS

Lab Sample ID: 680-87447-6

Date Collected: 02/12/13 09:13

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 48.5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	49	J	4.1	1.2	mg/Kg	☼	02/15/13 08:39	02/18/13 14:42	1
Barium	410	J	2.0	0.61	mg/Kg	☼	02/15/13 08:39	02/18/13 14:42	1
Cadmium	2.7	J	1.0	0.20	mg/Kg	☼	02/15/13 08:39	02/18/13 14:42	1
Chromium	66	J	2.0	1.0	mg/Kg	☼	02/15/13 08:39	02/18/13 14:42	1
Lead	420	J	2.0	1.1	mg/Kg	☼	02/15/13 08:39	02/18/13 14:42	1
Selenium	5.1	U	5.1	2.0	mg/Kg	☼	02/15/13 08:39	02/18/13 14:42	1
Silver	2.0	U	2.0	0.20	mg/Kg	☼	02/15/13 08:39	02/18/13 14:42	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.73	J	0.040	0.016	mg/Kg	☼	02/14/13 14:40	02/17/13 17:21	1

Client Sample ID: CV0971F-CS

Lab Sample ID: 680-87447-7

Date Collected: 02/12/13 09:10

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 67.2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	26		2.5	0.74	mg/Kg	☼	02/15/13 08:39	02/18/13 14:48	1
Barium	290		1.3	0.38	mg/Kg	☼	02/15/13 08:39	02/18/13 14:48	1
Cadmium	1.2		0.63	0.13	mg/Kg	☼	02/15/13 08:39	02/18/13 14:48	1
Chromium	34		1.3	0.63	mg/Kg	☼	02/15/13 08:39	02/18/13 14:48	1
Lead	260		1.3	0.66	mg/Kg	☼	02/15/13 08:39	02/18/13 14:48	1
Selenium	3.1	U	3.1	1.3	mg/Kg	☼	02/15/13 08:39	02/18/13 14:48	1
Silver	1.3	U	1.3	0.12	mg/Kg	☼	02/15/13 08:39	02/18/13 14:48	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.52		0.029	0.012	mg/Kg	☼	02/14/13 14:40	02/17/13 17:23	1

Client Sample Results

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87447-3
SDG: 68087447-3

Client Sample ID: CV0971K-CS

Lab Sample ID: 680-87447-12

Date Collected: 02/12/13 09:40

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 52.8

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	29		3.2	0.95	mg/Kg	☆	02/15/13 08:39	02/18/13 15:06	1
Barium	300		1.6	0.48	mg/Kg	☆	02/15/13 08:39	02/18/13 15:06	1
Cadmium	1.9		0.80	0.16	mg/Kg	☆	02/15/13 08:39	02/18/13 15:06	1
Chromium	63		1.6	0.80	mg/Kg	☆	02/15/13 08:39	02/18/13 15:06	1
Lead	440		1.6	0.85	mg/Kg	☆	02/15/13 08:39	02/18/13 15:06	1
Selenium	4.0	U	4.0	1.6	mg/Kg	☆	02/15/13 08:39	02/18/13 15:06	1
Silver	0.30	J	1.6	0.15	mg/Kg	☆	02/15/13 08:39	02/18/13 15:06	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.38		0.034	0.014	mg/Kg	☆	02/14/13 14:40	02/17/13 17:26	1

Client Sample ID: 021213-RB-Shovel

Lab Sample ID: 680-87447-31

Date Collected: 02/12/13 12:36

Matrix: Water

Date Received: 02/14/13 10:18

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20	4.6	ug/L		02/15/13 13:22	02/20/13 20:16	1
Barium	10	U	10	2.3	ug/L		02/15/13 13:22	02/20/13 20:16	1
Cadmium	5.0	U	5.0	2.0	ug/L		02/15/13 13:22	02/20/13 20:16	1
Chromium	10	U	10	1.2	ug/L		02/15/13 13:22	02/20/13 20:16	1
Lead	10	U	10	4.0	ug/L		02/15/13 13:22	02/20/13 20:16	1
Selenium	20	U	20	6.4	ug/L		02/15/13 13:22	02/20/13 20:16	1
Silver	10	U	10	0.89	ug/L		02/15/13 13:22	02/20/13 20:16	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.091	ug/L		02/18/13 11:02	02/20/13 16:48	1

Client Sample ID: CV0971A-CS (sieve)

Lab Sample ID: 680-87447-32

Date Collected: 02/12/13 08:45

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 79.7

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	21		2.4	0.71	mg/Kg	☆	02/15/13 08:39	02/18/13 15:13	1
Barium	220		1.2	0.36	mg/Kg	☆	02/15/13 08:39	02/18/13 15:13	1
Cadmium	1.5		0.60	0.12	mg/Kg	☆	02/15/13 08:39	02/18/13 15:13	1
Chromium	36		1.2	0.60	mg/Kg	☆	02/15/13 08:39	02/18/13 15:13	1
Lead	310		1.2	0.63	mg/Kg	☆	02/15/13 08:39	02/18/13 15:13	1
Selenium	3.0	U	3.0	1.2	mg/Kg	☆	02/15/13 08:39	02/18/13 15:13	1
Silver	0.17	J	1.2	0.11	mg/Kg	☆	02/15/13 08:39	02/18/13 15:13	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.32		0.023	0.0095	mg/Kg	☆	02/14/13 14:40	02/17/13 17:28	1

TestAmerica Savannah

Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)

Client Sample Results

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87447-3
SDG: 68087447-3

Client Sample ID: CV0971E-CS (sieve)

Lab Sample ID: 680-87447-33

Date Collected: 02/12/13 09:13

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 81.8

Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	40		2.4	0.70	mg/Kg	☆	02/15/13 08:40	02/18/13 15:21	1
Barium	280		1.2	0.36	mg/Kg	☆	02/15/13 08:40	02/18/13 15:21	1
Cadmium	2.1		0.59	0.12	mg/Kg	☆	02/15/13 08:40	02/18/13 15:21	1
Chromium	47		1.2	0.59	mg/Kg	☆	02/15/13 08:40	02/18/13 15:21	1
Lead	370		1.2	0.63	mg/Kg	☆	02/15/13 08:40	02/18/13 15:21	1
Selenium	3.0	U	3.0	1.2	mg/Kg	☆	02/15/13 08:40	02/18/13 15:21	1
Silver	0.53	J	1.2	0.11	mg/Kg	☆	02/15/13 08:40	02/18/13 15:21	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.40		0.022	0.0090	mg/Kg	☆	02/14/13 14:40	02/17/13 17:31	1

Client Sample ID: CV0971F-CS (sieve)

Lab Sample ID: 680-87447-34

Date Collected: 02/12/13 09:10

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 78.7

Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	29		2.2	0.65	mg/Kg	☆	02/15/13 08:40	02/18/13 15:28	1
Barium	320		1.1	0.33	mg/Kg	☆	02/15/13 08:40	02/18/13 15:28	1
Cadmium	1.4		0.55	0.11	mg/Kg	☆	02/15/13 08:40	02/18/13 15:28	1
Chromium	41		1.1	0.55	mg/Kg	☆	02/15/13 08:40	02/18/13 15:28	1
Lead	320		1.1	0.59	mg/Kg	☆	02/15/13 08:40	02/18/13 15:28	1
Selenium	2.8	U	2.8	1.1	mg/Kg	☆	02/15/13 08:40	02/18/13 15:28	1
Silver	0.26	J	1.1	0.11	mg/Kg	☆	02/15/13 08:40	02/18/13 15:28	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.45		0.022	0.0090	mg/Kg	☆	02/14/13 14:40	02/17/13 17:38	1

Client Sample ID: CV0971K-CS (sieve)

Lab Sample ID: 680-87447-35

Date Collected: 02/12/13 09:40

Matrix: Solid

Date Received: 02/14/13 10:18

Percent Solids: 75.7

Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20		2.5	0.74	mg/Kg	☆	02/15/13 08:40	02/18/13 15:34	1
Barium	240		1.3	0.38	mg/Kg	☆	02/15/13 08:40	02/18/13 15:34	1
Cadmium	1.6		0.63	0.13	mg/Kg	☆	02/15/13 08:40	02/18/13 15:34	1
Chromium	48		1.3	0.63	mg/Kg	☆	02/15/13 08:40	02/18/13 15:34	1
Lead	330		1.3	0.67	mg/Kg	☆	02/15/13 08:40	02/18/13 15:34	1
Selenium	3.1	U	3.1	1.3	mg/Kg	☆	02/15/13 08:40	02/18/13 15:34	1
Silver	0.26	J	1.3	0.12	mg/Kg	☆	02/15/13 08:40	02/18/13 15:34	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.29		0.024	0.010	mg/Kg	☆	02/14/13 14:40	02/17/13 17:40	1